



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/348,865	07/07/1999	EITAN MEDINA	MP0107	5861

23624 7590 09/05/2002

MARVELL SEMICONDUCTOR, INC.
INTELLECTUAL PROPERTY DEPARTMENT
700 FIRST AVENUE, MS# 509
SUNNYVALE, CA 94089

[REDACTED]
EXAMINER

ABELSON, RONALD B

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 09/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/348,865	MEDINA ET AL.
	Examiner	Art Unit
	Ronald Abelson	2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 July 1999.
 - 2a) This action is FINAL. 2b) This action is non-final.
 - 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.
- Disposition of Claims**
- 4) Claim(s) 1-6 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 - 5) Claim(s) _____ is/are allowed.
 - 6) Claim(s) 1 and 4-6 is/are rejected.
 - 7) Claim(s) 2,3 is/are objected to.
 - 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 07 July 1999 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | | |
|---|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | ✓ | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | | 6) <input type="checkbox"/> Other: _____ . |

Art Unit: 2663

Specification

1. The disclosure is objected to because of the following informalities: On page 2 line 6, the current status of US patent application 08/790,155 must be updated.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

claim 1
see applicants
fig 2

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin (US 6,388,993).

Regarding claim 1, Shin teaches a method and apparatus for a data network comprising at least one crossbar (fig. 1 box 3). Each crossbar comprises N ports. Note, the switch contains $2N$ ports since each routing table element has a separate connection for input and output to the switching element. The switch further comprises a plurality of N devices each associated with

device
input & output buffer

Art Unit: 2663

and connected to one port on one of the crossbars (fig. 1, Routing Table Element). Each port of one crossbar comprises: an input/output buffer for receiving/sending messages from/to the other N-1 buffers (fig. 1, Input Buffer). In addition the switch comprises N fullness sensors, each associated with one buffer and a shutoff means (back-pressure, col. 5 line 61 - col. 6 line 43).

As previously noted, the differences between the applicant's and Shin's inventions are N vs. 2N ports. To use N ports would have been obvious to one skilled in the art. By using N ports, one could take advantage of the fact that the inputs and outputs lines connected to a given Routing Table Element (fig. 1 box 1) can share a common port. This would make the save on the cost of manufacturing the switch since separate input/output ports would not be used.

Regarding claim 4, an arbiter (fig. 2 box 14, col. 6 lines 43 - 48).

Regarding claim 6, in addition to the limitations listed in claim 1, Shin teaches at least two units for removing data from the buffers (fig. 2 box 12,13,14, col. 6 lines 42 - 47).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin as applied to claim 1 above, and further in view of Horst (US 6,157,967).

Shin teaches a single crossbar switch.

Horst teaches a bus link connecting the devices (fig. 1A element NIO bus).

Therefore it would have been obvious to one of ordinary skill in the art, having both Shin and Horst before him/her and with the teachings [a] as shown by Shin, a network switch for communicating among the ports where each port outputs a backpressure signal to inform the other ports that it is full, and [b] as shown by Horst, an IO bus connecting multiple crossbar switches and their associated input devices, to be motivated to modify the system of Shin by connecting multiple switches (fig. 1 box 3) to the associated inputs (fig. 1 box 1) via a bus. This would improve the system by providing a proven way of connecting multiple identical switches to common input devices.

Allowable Subject Matter

5. Claims 2 and 3 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

Art Unit: 2663

independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: Shin teaches P logical queues based upon priority (col. 5 lines 61 - 67) while the applicant states N-1 buffers.

Conclusion

7. The prior art is of record but not relied upon in the office action. Gulick (US 6,314,501) teaches an output flag for each buffer in a device (fig. 30, col. 44 lines 28 - 39).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Art Unit: 2663

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

RA

Ronald Abelson
Examiner
Art Unit 2663

RA

August 29, 2002

Chau T. Nguyen
CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600